ISL CORPORATION®

Electronic Test Equipment and Instrumentation

Thank you for your interest in the **Current Ring (Tm) products**. The **Current Ring (Tm) indicators** are a new innovative product which is inexpensive and will save you valuable time and money.

The Current Ring (Tm) indicator is a small maintenance device designed to indicate electrical problems faster than anything on the market. When it's indicating light goes off, an interruption or failure of electrical flow (current) is indicated. Advantages of the **Current Ring (Tm)** have proven:

- Reduced maintenance time in troubleshooting.
- Assurance that a load is running.
- Indication of current flow at a glance.
- Indication of current flow to distant or inconvenient remote users.
- Bright safety yellow, non-conductive housing, non-obtrusive.
- Easy installation, no splicing or electrical connections, rugged construction.
- Especially valuable when used with heating elements to immediately detect an open unit.
- May be used as an alternating current indicator and or measurement circuit.
- Alternating current flow to logic interface.
- Alternating current flow to solid state relay.
- Adjustable, alternating current level indicator.

In the United States, I.S.L. Corporation is the national distributor for the Current Ring (Tm) indicators. **In Canada, Vrolet Instrument Company of Burlington** is the distributor of **Current Ring (Tm) products**. To reach Vrolet Instrument Company at 3017 St. Clair Avenue, Burlington, Ontario L7N 3P5, **telephone (416) 827-8233 Toronto area, or Fax (416) 634-9095.**

Sincerely, Stu Dunn

VROLET INSTRUMENT COMPANY

There is no limit on the low voltage.
The high voltage is limited by the design constraints of the equipment that the indicators are used.
The indicators must not be placed on bare uninsulated wires. The uses must not depend on the plastic housing of the indicators to provide electrical insulation for the current-carrying wires. All electrical insulation must be provided by the insulation on the current-carrying wire.

Wire size:

The hole in the center of the indicator is 5/16 inch (7.94mm) in diameter. This size hole will admit a maximum number of wires depending on the particular wire size. The following table lists the most common wire sizes.

Maximum Number of Passes	PVC insulated Wire Size in AWG
1	6
2	10
3	12
4	18
7	20
10	22
14	24

The above table is to be used as a guide line only using PVC insulated wire. These values will may change depending on type and thickness of the insulation.

Weight:

The indicators weigh .5 ounce (14 grams)

Environment:

The indicators are designed to be used in an interior electrical installation. The indicators are not waterproof and must be protected from direct exposure to moisture.

Temperature:

The indicators may be stored in an environment from -67 to +212 degrees fahrenheit (-55 to +100 degrees Centigrade).

Operating temperatures must not exceed -40 to +176 degrees fahrenheit (-40 to +80 degrees Centigrade).

Usage:

The Current Ring Indicators are designed primarily to be used as a troubleshooting aid.

Frequency:

The Current Ring Indicators will operate at the rated specifications from 50 thru 400 hertz. The Current Ring Indicator with the LED will operate below 50 hertz but will have a higher indicating level and the LED will flicker.

Operation outside of this range is not recommended.

The indicators will only operate on Alternating Current, they will not operate on Direct Current.

Attachment:

The indicators are classified as "Wire Mounted Indicators" which are intended to be directly attached to and supported by the current-carrying wire. The indicators may be held in place with the yellow nylon tie that is supplied with the unit.

An indicator may also be held in place by wrapping the current-carrying wire around and through the indicator. One turn is usually sufficient to hold an indicator in place.

Bracket:

A mounting bracket (Part Number CR-5/16-MB) is available to mount the indicator with the LED to front panel. The bracket is placed over and around the indicator with LED and placed up against a control panel. The bracket is secured in place against the panel with two #6 screws. The screws are not furnished with the bracket. A rubber washer, supplied with the bracket, is placed between the indicator and the inside of the panel. The mounting holes should be .140 +.005 -.001 inch (3.60 mm) in diameter and spaced 1.562 +/.005 inch (39.7mm) apart. The clearance hole for the LED should be .203 inch +.005 -.001 (5.20mm) diameter.

The bracket is a one piece aluminum construction. The aluminum material has no effect on the operation of the indicators.

INDICATORS WITH WIRE LEADS

These indicators use the same core as the indicators with the LED. The leads from the coil are attached across two zener diodes and the wire leads that exit the indicator.

The two diodes are connected together in series in reverse polarity. The zener diodes operate to limit the output from the indicator to a maximum of 4.2 volts regardless of the input current level.

The indicator with wire leads may be attached directly to the LED Panel Holder for a remote indication of the electrical current.

The indicator with wire leads may be attached to any high impedance volt meter in order to read directly Alternating Current values. A 2.4 ohm, 1 watt, 1% burden resistor must be placed across the output leads from the indicator. A wire wound or film resistor may be used. The voltmeter will read voltage that is 1/100 the value of the current in the current-carrying wire. For example: Current value of 5 Amp will impose .05 volts (50 mv) across the burden resistor. A Current value of 25 Amps will impose .25 volts (250 mv AC) across the burden resistor. It is important to remember that the indicator is accurate only over a limited range from 5 to 50 Amps. Readings taken outside this range will not be accurate.

This range may be changed by running the current-carrying wire through the ring several times. Two passes will change the range to 2.5 to 25 Amps. Three passes will provide a range of 1.25 to 12.5 Amps.

Panel Holder:

The LEd Panel Holder (P/N CR-PH-LED) is intended to be attached directly to the Current Ring Indicator with wire leads. The panel holder contains a red/red bi-polar LED. This type of LED contains two red chips that are connected in anti-parallel. This arrangement allows it to be operated directly from an Alternating Current source. All standard LED's must be operated from a Direct Current source.

There is a current limiting resistor wired in one of the leads extending from the LED Panel Holder. This resistor limits the current to the LED from the indicator with wire leads.

A fixed or variable resistor may be attached across the LED Panel Holder and the Current Ring Indicator with the wire leads, to vary the turn-on point of the LED. A 1/4 watt, 100 ohm variable resistor will change the turn-on point from 2 Amps with 100 ohm resistance to a 100 Amp turn-on point with 1.0 ohm resistance.

LED Alone:

The LED alone may be obtained under Part Number CR-LED. This is the same red\red bi-polar LED that is in the LED Panel Holder, Part Number CR-PH. It does not contain a limiting resistor.

Part Numbers:

The numbers 5/16 in the part number represent the size of the hole on the centre of the indicators. The present list of part numbers is as follows:

CR-5/16	Current Ring with LED
CR-5/16-WL	Current Ring with Wire Leads
MB 5/16	Mounting Bracket (for use with CR-5/16)
CR-PH-LED	LED Panel Holder with LED + Resistor
CR-LED	LED alone

Graphs:

Output Voltage, versus Input Current, for different lead resistors are contained in following graphs. Note: all graphs are drawn from data taken with one wire pass through the Current Ring.

Manufacturing:

The indicators are assembled in St. Louis, Missouri. The products are classified as "Made in America".

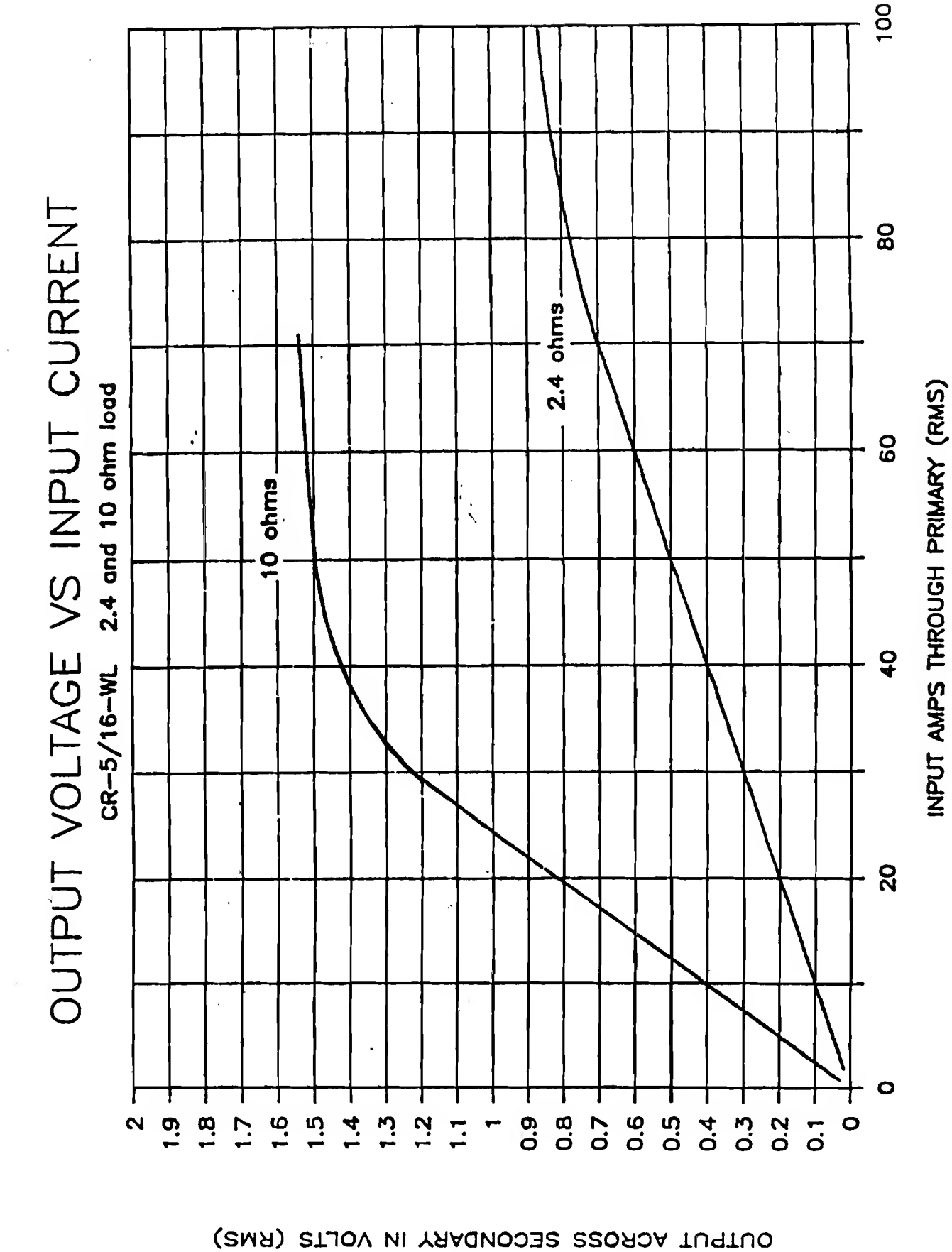
Patents and Trademarks:

The indicators have several patents that are now pending.

The terms "Current Ring" and "Instant Troubleshooting" are trademarks owned by the Current Ring Company. Any literature or documentation that uses the term **Current Ring** or **Instant Troubleshooting** must be capitalized, underlined or have a TM added to the words.

The word "Current Ring" must never be used as a noun in a sentence. It must only be used as an adjective that modifies a noun; such as, "Current Ring indicators", or "Current Ring brand wire mounted indicators".

CURRENT RING CO., INC.
P.O Box 1525
Ballwin, MO 63022
(314) 227-4740



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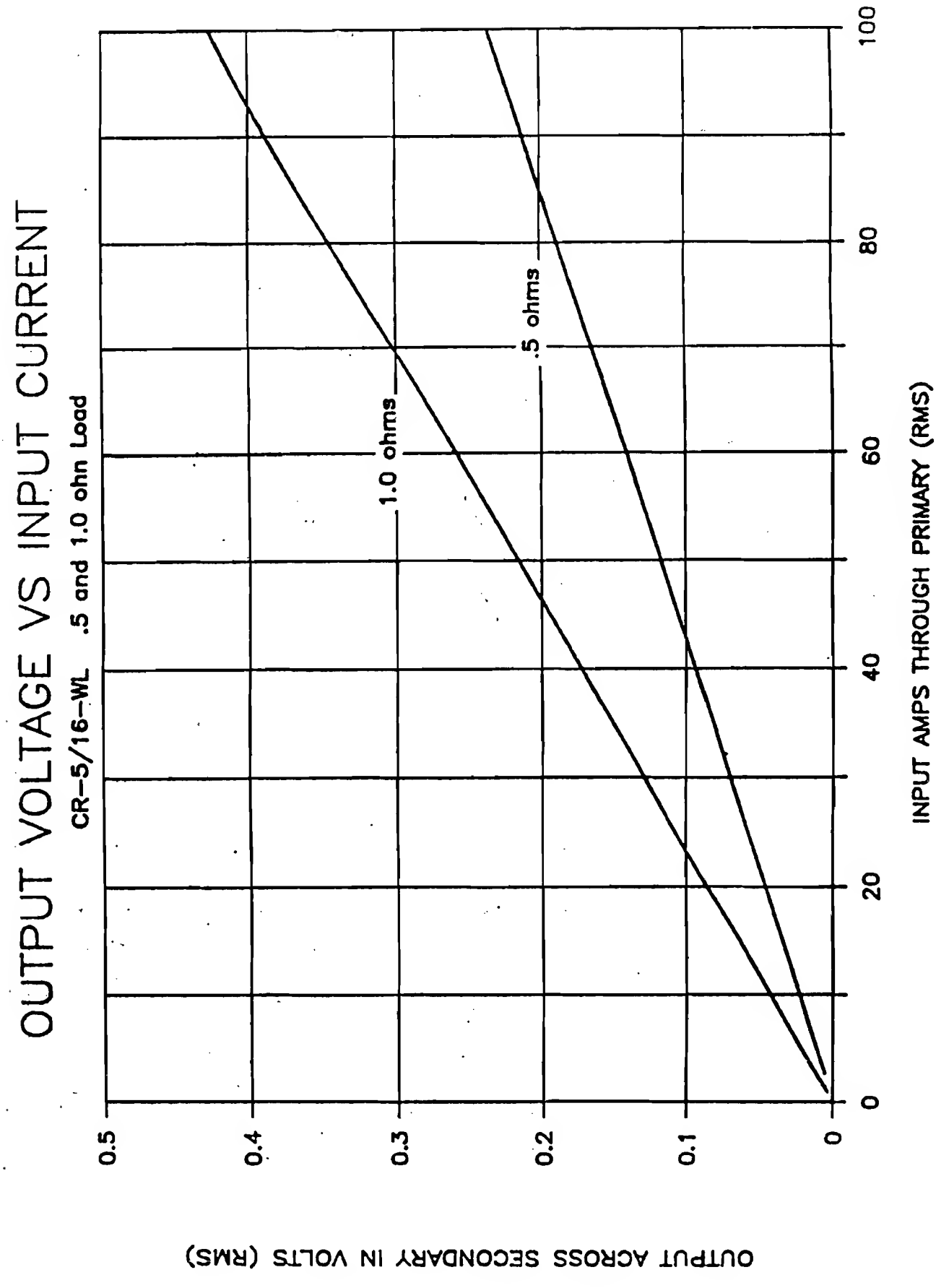

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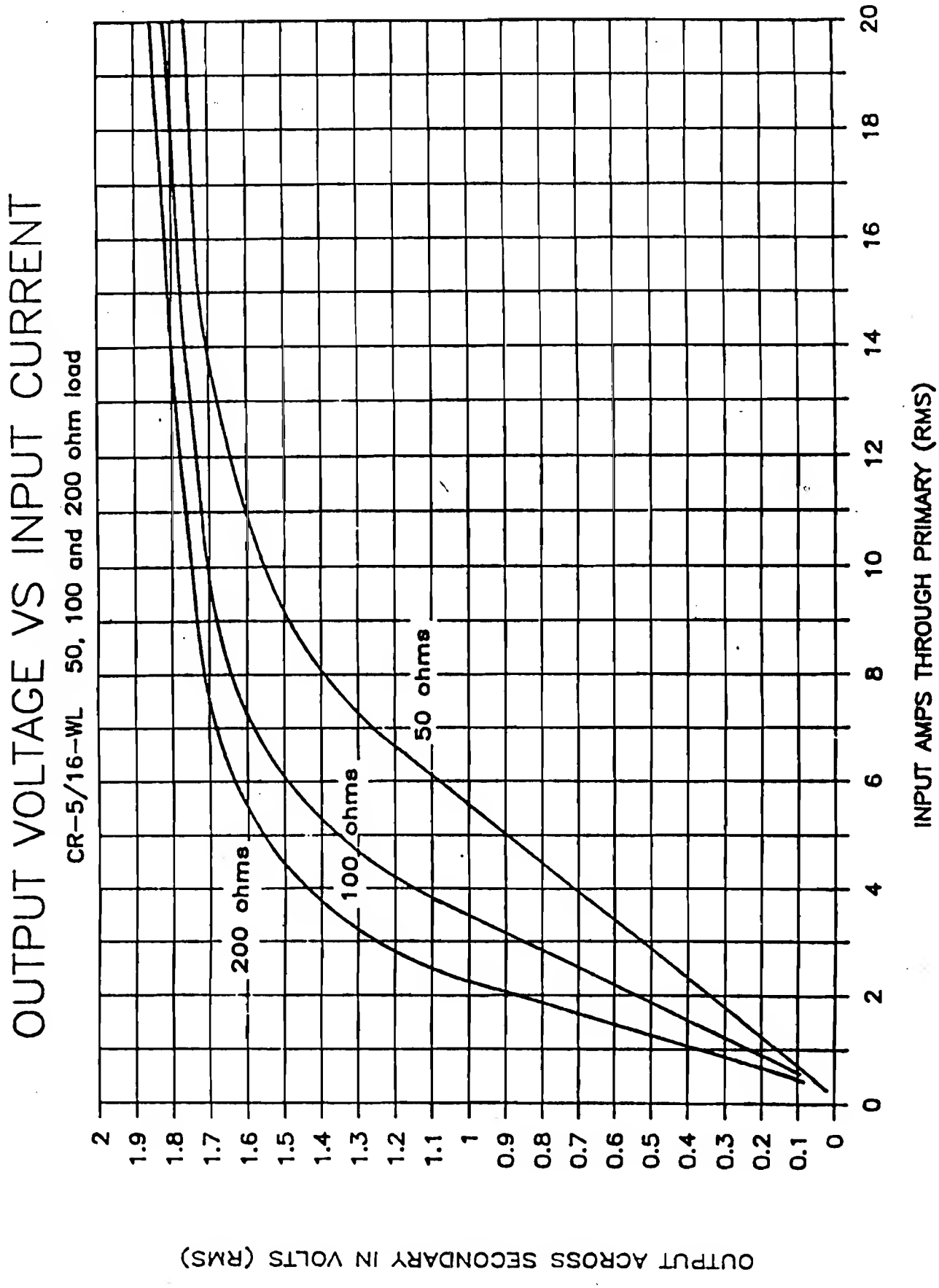

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The installation of a **Current Ring** (TM) indicator on power factor correction capacitors will indicate a decrease in current flow through defective capacitors.

A selected shunt resistor across the leads of the **Current Ring** (TM) will set the level at which the L.E.D. (light emitting diode) stops glowing, indicating a high internal impedance of the capacitor.

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CURRENT RING PRICE LIST

October, 1988

MODEL	PRICE
CR 5/16	$12.65
CR 5/16 WL	$11.95
CR - PH - LED	$ 3.95
CR - LED	$ 2.45
MB 5/16	$ 3.95

Note: Federal and Provincial Taxes Not Included in Price